

Freeform Search

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IBM Technical Disclosure Bulletins

Term:

L20 and (asker-C adj hardness)

Display: Documents in Display Format: Starting with Number

Generate: ☐ Hit List ☒ Hit Count ☐ Side by Side ☐ Image

Search

Clear

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Search History

DATE: Wednesday, March 29, 2006 [Printable Copy](#) [Create Case](#)

Set Name	Query	Hit Count	Set Name
side by side			result set
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L21</u>	L20 and (asker-C adj hardness)	37	<u>L21</u>
<u>L20</u>	(399/179 399/280 399/281 399/282 399/283 399/284 399/285 399/286).ccls. or (430/66).ccls.	3590	<u>L20</u>
<u>L19</u>	electrophotograph\$3	176540	<u>L19</u>
<u>L18</u>	(printer or (copy\$4 or facsimile) adj machine)	687354	<u>L18</u>
<u>L17</u>	(image adj forming) with (apparatus or machine)	112025	<u>L17</u>
<u>L16</u>	(image adj froming) with (appratus or machine)	1	<u>L16</u>
<u>L15</u>	(399/179 399/280 399/281 399/282 399/283 399/284 399/285 399/286).ccls. or (430/66).ccls.	3590	<u>L15</u>
<u>L14</u>	(399/179 399/280 399/281 399/282 399/283 399/284 399/285 399/286).ccls. or (430/66).ccls.	3590	<u>L14</u>
<u>L13</u>	(printer or (copy\$4 or facsimile) adj machine)	687354	<u>L13</u>
<u>L12</u>	(image adj forming) with (apparatus or machine)	112025	<u>L12</u>
<u>L11</u>	(image adj froming) with (appratus or machine)	1	<u>L11</u>
<u>L10</u>	(399/179 399/280 399/281 399/282 399/283 399/284 399/285	3590	<u>L10</u>

Application
Number

SEARCH

IDS Flag Clearance for Application 10806817

IDS
Information

Content	Mailroom Date	Entry Number	IDS Review	Reviewer
M844	03-23-2004	13	<input checked="" type="checkbox"/>	03-29-2006 10:32:19 BShrivastav

UPDATE

	399/286).ccls. or (430/66).ccls.		
<u>L9</u>	L8 and (asker-c adj hardness)	20	<u>L9</u>
<u>L8</u>	L7 and L1	506	<u>L8</u>
<u>L7</u>	L6 and L5 and L4 and L3	9564	<u>L7</u>
<u>L6</u>	(elastic or hard\$4) or (Asker-C adj hardness)	2890181	<u>L6</u>
<u>L5</u>	electrophotograph\$3	176540	<u>L5</u>
<u>L4</u>	(printer or (copy\$4 or facsimile) adj machine)	687354	<u>L4</u>
<u>L3</u>	(image adj forming) with (apparatus or machine)	112025	<u>L3</u>
<u>L2</u>	(image adj froming) with (appratus or machine)	1	<u>L2</u>
<u>L1</u>	399/179,280-286.ccls. or 430/66.ccls.	3590	<u>L1</u>

END OF SEARCH HISTORY

Hit List

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Search Results - Record(s) 1 through 35 of 37 returned.

- ☐ 1. Document ID: US 6714754 B2 Relevance Rank: 40

Using default format because multiple data bases are involved.

L21: Entry 25 of 37

File: USPT

Mar 30, 2004

US-PAT-NO: 6714754

DOCUMENT-IDENTIFIER: US 6714754 B2

**** See image for Certificate of Correction ****

TITLE: Developing roller for electrophotography, developing apparatus, apparatus unit and image forming apparatus

DATE-ISSUED: March 30, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ozeki; Yukihiro	Kanagawa-ken			JP
Sakaizawa; Katsuhiko	Shizuoka-ken			JP
Nonomura; Makoto	Kanagawa-ken			JP
Sekiguchi; Manami	Shizuoka-ken			JP

US-CL-CURRENT: 399/286; 492/28

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	Pub	Draw
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- ☐ 2. Document ID: US 20030016967 A1 Relevance Rank: 40

L21: Entry 14 of 37

File: PGPB

Jan 23, 2003

PGPUB-DOCUMENT-NUMBER: 20030016967

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030016967 A1

TITLE: Developing roller for electrophotography, developing apparatus, apparatus unit and image forming apparatus

PUBLICATION-DATE: January 23, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
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Ozeki, Yukihiro	Kanagawa-ken	JP
Sakaizawa, Katsuhiko	Shizuoka-ken	JP
Nonomura, Makoto	Kanagawa-ken	JP
Sekiguchi, Manami	Shizuoka-ken	JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo		JP	03

APPL-NO: 10/245372 [PALM]
 DATE FILED: September 18, 2002

RELATED-US-APPL-DATA:

Application 10/245372 is a division-of US application 09/643423, filed August 22, 2000, US Patent No. 6484007

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	11-236911	1999JP-11-236911	August 24, 1999

INT-CL-PUBLISHED: [07] G03 G 15/08

US-CL-PUBLISHED: 399/286

US-CL-CURRENT: 399/286

REPRESENTATIVE-FIGURES: 2

ABSTRACT:

A developing roller for electrophotography is disclosed which is composed of a conductive mandrel, a charge-providing layer having a charge-providing performance to a non-magnetic one-component toner, formed at the surface of the roller, a base layer having an elasticity, formed at a position nearer to the mandrel of the roller than the charge-providing layer and an elastic intermediate layer formed at a position between the base layer and the charge-providing layer. The elastic intermediate layer is formed of a composition having a contact angle to water which is smaller than that of a composition for forming the base layer. Also, disclosed are a developing apparatus, an apparatus unit and an image forming apparatus using the developing roller.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC	Draw D
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☐ 3. Document ID: US 6484007 B1 Relevance Rank: 38

L21: Entry 28 of 37

File: USPT

Nov 19, 2002

US-PAT-NO: 6484007

DOCUMENT-IDENTIFIER: US 6484007 B1

**** See image for Certificate of Correction ****

TITLE: Image forming apparatus featuring a conductive developing roller including a mandrel, an elastic layer, an intermediate layer, and a charge-providing layer formed thereon

DATE-ISSUED: November 19, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ozeki; Yukihiro	Yokohama			JP
Sakaizawa; Katsuhiro	Numazu			JP
Nonomura; Makoto	Kawasaki			JP
Sekiguchi; Manami	Mishima			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo			JP	03

APPL-NO: 09/643423 [PALM]

DATE FILED: August 22, 2000

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	11-236911	August 24, 1999

INT-CL-ISSUED: [07] G03 G 15/08

US-CL-ISSUED: 399/286

US-CL-CURRENT: 399/286

FIELD-OF-CLASSIFICATION-SEARCH: 399/286, 399/275, 399/299, 399/302, 399/308
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5099286</u>	March 1992	Nishise et al.	399/302
<u>5597652</u>	January 1997	Utsunomiya et al.	428/382
<u>5867755</u>	February 1999	Sato	399/279 X
<u>6035172</u>	March 2000	Mimura et al.	399/286
<u>6070041</u>	May 2000	Nakayasu et al.	399/299 X

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
0 911 704	April 1999	EP	
63-212944	September 1988	JP	
5-72883	March 1993	JP	

10-3210	January 1998	JP
10-333422	December 1998	JP
WO99/24487	May 1999	WO

ART-UNIT: 2852

PRIMARY-EXAMINER: Grainger; Quana M.

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

A developing roller for electrophotography is disclosed which is composed of a conductive mandrel, a charge-providing layer having a charge-providing performance to a non-magnetic one-component toner, formed at the surface of the roller, a base layer having an elasticity, formed at a position nearer to the mandrel of the roller than the charge-providing layer and an elastic intermediate layer formed at a position between the base layer and the charge-providing layer. The elastic intermediate layer is formed of a composition having a contact angle to water which is smaller than that of a composition for forming the base layer. Also, disclosed are a developing apparatus, an apparatus unit and an image forming apparatus using the developing roller.

45 Claims, 9 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	Keywords	Drawings
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☐ 4. Document ID: US 20050078987 A1 Relevance Rank: 37

L21: Entry 3 of 37

File: PGPB

Apr 14, 2005

PGPUB-DOCUMENT-NUMBER: 20050078987
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20050078987 A1

TITLE: Developing roller, electrophotographic process cartridge, and
electrophotographic image forming apparatus

PUBLICATION-DATE: April 14, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Nakamura, Minoru	Shizuoka		JP
Yamamoto, Arihiro	Shizuoka		JP
Ishida, Kazutoshi	Shizuoka		JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Canon Kabushiki Kaisha	Tokyo		JP	03

APPL-NO: 10/960067 [PALM]
DATE FILED: October 8, 2004

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2003-353934	2003JP-2003-353934	October 14, 2003

INT-CL-PUBLISHED: [07] G03 G 15/08

US-CL-PUBLISHED: 399/286
US-CL-CURRENT: 399/286

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

In a developing roller having a shaft member, a conductive elastic layer provided on the shaft member, and a conductive resin layer constituting a most-surface layer, the conductive resin layer contains a condensed polycyclic organic pigment as exemplified by at least one selected from the group consisting of a quinacridone pigment, a threne pigment, a perylene pigment and a perinone pigment. The developing roller can effectively keep ghost form occurring and can achieve high image density in a low-temperature and low-humidity environment.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Foot	Draw P
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☐ 5. Document ID: US 20030194250 A1 Relevance Rank: 36

L21: Entry 10 of 37

File: PGPB

Oct 16, 2003

PGPUB-DOCUMENT-NUMBER: 20030194250
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030194250 A1

TITLE: Developing assembly, developer quantity control blade and process for manufacturing developer quantity control blade

PUBLICATION-DATE: October 16, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Ishigaki, Toru	Chiba		JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Canon Kasei Kabushiki Kaisha	Ibaraki		JP	03

APPL-NO: 10/408577 [PALM]

DATE FILED: April 8, 2003

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	110545/2002	2002JP-110545/2002	April 12, 2002

INT-CL-PUBLISHED: [07] G03 G 15/08

US-CL-PUBLISHED: 399/279; 399/284, 399/286

US-CL-CURRENT: 399/279; 399/284, 399/286

REPRESENTATIVE-FIGURES: 3

ABSTRACT:

In a developing assembly comprising a developer-carrying member and a developer quantity control blade kept in pressure contact with the developer-carrying member, the developer-carrying member has a deformation percentage D of 0.5% or less in the direction of pressure contact, and the developer quantity control blade has a ten-point average roughness Rz of from 0.3 .mu.m to 20 .mu.m at its surface on the side kept in contact with the developer-carrying member (a charge control face). The developing assembly can prevent faulty images such as lines and uneven images due to the deformation of developer-carrying member even though any deformation due to the pressure contact of the developer quantity control blade has taken place in the developer-carrying member while the developing assembly is stopped.

Full	Title	Abstract	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Keywords	Drawings
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☐ 6. Document ID: US 20050111885 A1 Relevance Rank: 36

L21: Entry 2 of 37

File: PGPB

May 26, 2005

PGPUB-DOCUMENT-NUMBER: 20050111885

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050111885 A1

TITLE: Developing assembly, developer quantity control blade and process for manufacturing developer quantity control blade

PUBLICATION-DATE: May 26, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Ishigaki, Toru	Chiba		JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Canon Kasei Kabushiki Kaisha	Ibaraki		JP	03

APPL-NO: 11/031068 [PALM]

DATE FILED: January 10, 2005

RELATED-US-APPL-DATA:

Application 11/031068 is a division-of US application 10/408577, filed April 8, 2003, PENDING

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2002-110545	2002JP-2002-110545	April 12, 2002

INT-CL-PUBLISHED: [07] G03 G 15/08

US-CL-PUBLISHED: 399/279; 399/284, 399/286

US-CL-CURRENT: 399/279; 399/284, 399/286

REPRESENTATIVE-FIGURES: 3

ABSTRACT:

In a developing assembly comprising a developer-carrying member and a developer quantity control blade kept in pressure contact with the developer-carrying member, the developer-carrying member has a deformation percentage D of 0.5% or less in the direction of pressure contact, and the developer quantity control blade has a ten-point average roughness Rz of from 0.3 .mu.m to 20 .mu.m at its surface on the side kept in contact with the developer-carrying member (a charge control face). The developing assembly can prevent faulty images such as lines and uneven images due to the deformation of developer-carrying member even though any deformation due to the pressure contact of the developer quantity control blade has taken place in the developer-carrying member while the developing assembly is stopped.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw D
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☐ 7. Document ID: US 7016633 B2 Relevance Rank: 36

L21: Entry 18 of 37

File: USPT

Mar 21, 2006

US-PAT-NO: 7016633

DOCUMENT-IDENTIFIER: US 7016633 B2

TITLE: Developing assembly featuring a developer-carrying member having specified ranges of deformation and hardness and a developer quality control blade having a rough contact surface

DATE-ISSUED: March 21, 2006

PRIOR-PUBLICATION:

DOC-ID	DATE
US 20050111885 A1	May 26, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ishigaki; Toru	Chiba			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Canon Kasei Kabushiki Kaisha	Tsukuba			JP	03

APPL-NO: 11/031068 [PALM]
DATE FILED: January 10, 2005

RELATED-US-APPL-DATA:

division parent-doc US 10408577 00 20030408 ABANDONED child-doc US 1103106- 8

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	2002-110545	April 12, 2002

INT-CL-ISSUED:

TYPE	IPC	DATE	IPC-OLD
IPCP	G03G15/08	20060101	G03G015/08

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPP	<u>G03 G 15/08</u>	20060101

US-CL-ISSUED: 399/279; 399/284

US-CL-CURRENT: 399/279; 399/284

FIELD-OF-CLASSIFICATION-SEARCH: 399/279, 399/284, 399/274, 399/286
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>3892078</u>	July 1975	Closson, Jr.	36/68
<u>5689783</u>	November 1997	Sasame et al.	399/284
<u>5776395</u>	July 1998	Fujiwara et al.	264/146
<u>5812918</u>	September 1998	Nakaue et al.	399/284
<u>5895150</u>	April 1999	Watabe et al.	399/284
<u>6128458</u>	October 2000	Sato	399/252
<u>2003/0070748</u>	April 2003	Ishigaki et al.	156/244.18

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
9-50185	February 1997	JP	

2001-255738

September 2001

JP

ART-UNIT: 2852

PRIMARY-EXAMINER: Grainger; Quana

ATTY-AGENT-FIRM: Fitzpatrick, Cella, Harper & Scinto

ABSTRACT:

In a developing assembly comprising a developer-carrying member and a developer quantity control blade kept in pressure contact with the developer-carrying member, the developer-carrying member has a deformation percentage D of 0.5% or less in the direction of pressure contact, and the developer quantity control blade has a ten-point average roughness Rz of from 0.3 .mu.m to 20 .mu.m at its surface on the side kept in contact with the developer-carrying member (a charge control face). The developing assembly can prevent faulty images such as lines and uneven images due to the deformation of developer-carrying member even though any deformation due to the pressure contact of the developer quantity control blade has taken place in the developer-carrying member while the developing assembly is stopped.

6 Claims, 9 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference		Claims	KWC	Draw D.
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☐ 8. Document ID: US 20050214032 A1 Relevance Rank: 36

L21: Entry 1 of 37

File: PGPB

Sep 29, 2005

PGPUB-DOCUMENT-NUMBER: 20050214032

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050214032 A1

TITLE: Developing apparatus

PUBLICATION-DATE: September 29, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Koyanagi, Masato	Mishima-shi		JP
Kobayashi, Tetsuya	Numazu-shi		JP
Yamamoto, Shinya	Numazu-shi		JP
Matsuda, Kohei	Sunto-gun		JP
Agata, Shinichi	Sunto-gun		JP
Kawata, Kentarou	Numazu-shi		JP
Moriki, Yuji	Numazu-shi		JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
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Canon Kabushiki Kaisha

Tokyo

JP

03

APPL-NO: 11/090282 [PALM]

DATE FILED: March 28, 2005

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
JP	2004-097060 (PAT.	2004JP-2004-097060 (PAT.	March 29, 2004

INT-CL-PUBLISHED: [07] G03 G 15/08

US-CL-PUBLISHED: 399/279; 399/284, 399/286

US-CL-CURRENT: 399/279; 399/284, 399/286

REPRESENTATIVE-FIGURES: 1

ABSTRACT:

A developing apparatus including: a developer carrying member for carrying a developer, the developer carrying member being provided with an elastic layer and adapted to develop, with a developer, an electrostatic image formed on an image bearing member; wherein the developer includes a toner, the toner has a shape factor SF-1 of 100 or more but less than 130, the toner has a storage modulus G' (140.degree. C.) at 140.degree. C. of 2.0.times.10.sup.3 dN/m.sup.2 or more but less than 2.0.times.10.sup.4 dN/m.sup.2, the toner has a temperature, when the toner has a viscosity of 1.0.times.10.sup.3 Pa.multidot.s in a flow tester temperature elevation method, of 115.degree. C. or more but less than 130.degree. C., and, in a surface roughness of the developer carrying member, a center-line mean roughness Ra, a ten-point mean roughness Rz and a mean spacing Sm of irregularities satisfy following relationships (1): 1 0.06 Rz / Sm 0.4 0.8 Ra 2.0 (m) } (1)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	Keywords	Drawings
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☐ 9. Document ID: US 5887231 A Relevance Rank: 36

L21: Entry 30 of 37

File: USPT

Mar 23, 1999

US-PAT-NO: 5887231

DOCUMENT-IDENTIFIER: US 5887231 A

TITLE: Developing device and image forming apparatus

DATE-ISSUED: March 23, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Suzuki; Tsuyoshi	Nagoya			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Brother Kogyo Kabushiki Kaisha	Nagoya			JP	03

APPL-NO: [PALM]

DATE FILED: February 24, 1998

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	9-044464	February 27, 1997

INT-CL-ISSUED: [06] G03 G 15/08

US-CL-ISSUED: 399/236; 399/281

US-CL-CURRENT: 399/236; 399/281

FIELD-OF-CLASSIFICATION-SEARCH: 399/236, 399/272, 399/281, 430/120

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5086728</u>	February 1992	Kinoshita	399/281
<u>5110705</u>	May 1992	Hosoya et al.	430/120
<u>5655197</u>	August 1997	Okada et al.	399/281

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
7-160108	June 1995	JP	
8-106213	April 1996	JP	

ART-UNIT: 282

PRIMARY-EXAMINER: Pendegrass; Joan

ATTY-AGENT-FIRM: Oliff & Berridge, PLC

ABSTRACT:

A developing device is provided with: a developing roller for performing an electro-photography on a photosensitive body by using charged toners; a supplying roller for supplying the toners to the developing roller, the supplying roller being pushed against the developing roller so that an outer circumference of the supplying roller be deformed in a radius direction of the supplying roller; and a rotating device for rotating the supplying roller and the developing roller in directions opposite to each other at a contact portion between the supplying roller and the developing roller so that the toners be supplied from the supplying roller to the developing roller. A deformation amount in the radial direction of the

supplying roller is not less than 0.5 mm, and a value of dividing an absolute value of a line speed on an outermost circumference of the supplying roller by an absolute value of a line speed on an outermost circumference of the developing roller is less than 0.7 when the line speed on the outermost circumference of the developing roller is set to not less than 70 mm/second.

10 Claims, 5 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	K04C	Draw D
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☐ 10. Document ID: US 5164773 A Relevance Rank: 36

L21: Entry 32 of 37

File: USPT

Nov 17, 1992

US-PAT-NO: 5164773

DOCUMENT-IDENTIFIER: US 5164773. A

TITLE: Developing device used in electrophotographic field

DATE-ISSUED: November 17, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nishio; Yukio	Tama			JP
Kera; Hiroshi	Fukushima			JP
Tonomoto; Yoshihiro	Yokohama			JP
Hirose; Kazunori	Hiratsuka			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Fujitsu Limited	Kawasaki			JP	03

APPL-NO: 07/540728 [PALM]

DATE FILED: June 20, 1990

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	1-159319	June 21, 1989
JP	1-167642	June 29, 1989

INT-CL-ISSUED: [05] G03 G 15/06

US-CL-ISSUED: 355/245; 355/246, 355/261, 355/264, 355/265

US-CL-CURRENT: 399/283; 399/284, 399/286

FIELD-OF-CLASSIFICATION-SEARCH: 355/245, 355/264, 355/265, 355/270, 355/261, 355/251, 355/253, 355/298, 355/299, 355/246, 355/204, 355/208, 355/200, 118/653, 118/661, 118/651

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4286543</u>	September 1981	Ohnuma et al.	118/657
<u>4743937</u>	May 1988	Martin	355/259
<u>4745429</u>	May 1988	Mukai et al.	
<u>4755847</u>	July 1988	Matsushiro et al.	
<u>4760422</u>	July 1988	Seimiya et al.	355/253
<u>4788570</u>	November 1988	Ogata et al.	355/245
<u>4791882</u>	December 1988	Enoguchi et al.	118/653
<u>4893151</u>	January 1990	Yamazaki et al.	355/245
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<u>5068691</u>	November 1991	Nishio et al.	
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ABSTRACT:

A developing device using a one-component developer composed of toner particles includes a developing roller rotatably provided within the vessel, a portion of the developing roller being exposed therefrom and resiliently pressed against a surface of a photosensitive drum. The toner particles are entrained by the roller surface to form a developer layer therearound and are carried to the drum surface for the development of an electrostatic latent image formed thereon, and a blade member is engaged with the roller for regulating a thickness of the developer layer. A voltage is supplied to the roller to electrostatically move the toner particles from the roller to the latent image, and a voltage is applied to the blade member to inject an electrical charge to the developer layer. When an operation of the device is started, a supply of the voltages to the roller and blade member is carried out after the roller is rotated. When the operation is interrupted or stopped, the supply of the voltage to the blade member is prematurely stopped before the supply of the voltage to the roller and the rotation thereof are stopped.

26 Claims, 7 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draw D
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L21: Entry 27 of 37

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**** See image for Certificate of Correction ****

TITLE: Image-forming apparatus and image-forming method

DATE-ISSUED: June 10, 2003

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